

### REMARKS

As an initial matter, Applicants wish to thank the Examiner and her supervisor for conducting a telephonic interview with two of Applicants' representatives on April 20, 2010.

During the telephonic interview, the participants reviewed the present invention as claimed in Claim 1. The representatives clarified that the specific variation of resistivity within the ZnO layer was one of the distinguishing features, and that in their view the three cited references could not be permissibly combined to derive the claimed invention. They further explained that with regard to light, what especially mattered in this case was the transmission properties of the two sides of the ZnO layer, but shunt passivation was related instead to the spread of short-circuit currents into the ZnO layer or the prevention thereof.

The Examiners suggested that while the claim language currently defined the locations respectively of the two sides of the ZnO layer in terms of the location of the substrate, it might be helpful to define these locations in terms of the location of light incidence. They also indicated that they would perform a new search based on their improved understanding of the claimed invention.

The participants then reviewed the present invention as claimed in Claims 12 and 13. The representatives argued that even assuming that the two layers of an intermediate layer could be formed at different temperatures or pressures according to the prior art, the layers would also need to be formed by depositing a specific one of the layers on top of the other, to meet the terms of these claims. The Examiners remarked that the same issue regarding the definition of the locations respectively of the two sides of the ZnO layer, or the two layers of the intermediate layer in this case, might exist in Claims 12 and 13. They also suggested defining more specifically how the deposition of each of the layers is performed.

Applicants have now amended Claims 1, 4, 12 and 13, taking the Examiners' helpful comments into consideration, in an effort to define still more clearly what Applicants regard as their invention. Applicants also provide additional comments as follows.

According to one aspect of the present invention, a stacked photovoltaic element comprises the following elements stacked in series : 1) a transparent electrode (anode), 2) a first unit photovoltaic element composed of a pn- or pin-junction (UPE), 3) a ZnO layer, 4) a second UPE, and 5) a substrate (cathode) (para. [0050] and [0017]-[0019]). When shunt passivation takes place, part of the anode may be removed, but some short-circuit currents may remain in the second UPE and spread into the ZnO layer (para. [0051]). To help prevent the spread of such short-circuit currents, the resistance of the side of ZnO layer closer to 4) is made higher than that of the side closer to 2).<sup>1</sup>

Claim 1 now recites, among other features, that “a resistivity of the zinc oxide layer on the surface in contact with a unit photovoltaic element away from the anode as seen from the zinc oxide layer is higher than a resistivity of the zinc oxide layer on the surface in contact with a unit photovoltaic element near the anode as seen from the zinc oxide layer.”

Applicants note further that according to another aspect of the present invention, a stacked photovoltaic element comprises the following elements stacked in series: 1) a first UPE, 2) an  $\text{In}_2\text{O}_3$  layer, 3) a ZnO layer, and 4) a second UPE (para. [0025]). These elements are formed in time in the reverse numerical order. Specifically, 3) is formed on 4) through physical or chemical deposition, and 2) is then formed on 3) also through physical or chemical deposition (para. [0072], [0095], [0096], [0152] and [0153]).<sup>1</sup>

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1. It is to be understood that the scope of the claims is not limited by the details of this or any other embodiment that may be referred to.

Claims 12 and 13 now recite, among other features, “forming a first layer mainly composed of indium oxide on one of the unit photovoltaic elements by performing physical or chemical deposition on the unit photovoltaic element; and forming a second layer mainly composed of zinc oxide on and in direct contact with the first layer by performing physical or chemical deposition on the first layer.”

In view of the foregoing amendments and remarks, Applicants again respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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